



cells, wherein the anti-idiotypic antibody is coupled to a toxin, the function of which is to block translation of proteins, or coupled to a radioactive element or which anti-idiotypic antibody is in the form of a Fab fragment.

--20. Method according to claim 18 for treatment of pathologies involving endothelial cells engaged in an angiogenesis process, to promote angiogenesis, without affecting quiescent endothelial cells.

--21. Method according to claim 19, in which the antibody is coupled to a toxin chosen from saporin and ricin or a radioactive element, such as iodine-125 or -131.



--22. Method for stimulation of physiological angiogenesis, increasing the speed of formation of blood vessels in the course of cicatrization or maturation of the corpus luteum of the ovary, or for stimulation of angiogenesis in the course of obstructive pathologies of vessels, in order to reperfuse regions rendered ischemic during vascular thrombosis, comprising administering to a patient in need of such treatment an effective amount of anti-idiotypic antibodies.

--23. Method for treatment of pathologies requiring inhibition of angiogenesis, comprising administering to a patient in need of such treatment an effective amount of anti-idiotypic antibodies associated with a toxin or a radioactive element or of the Fab fragment of anti-idiotypic antibodies.

--24. Method according to claim 18 for diagnosis of pathologies involving endothelial cells engaged in an angiogenesis process.

--25. Anti-idiotypic vascular endothelial growth factor antibody, said antibody being a ligand of the human KDR receptor or of the murine flk-1 receptor and not a ligand of flt.

--26. Anti-idiotypic vascular endothelial growth factor antibody, having the following properties:

- it targets angiogenic endothelial cells,
- it is circulating,
- it has a half-life of about 23 days, especially about 21 days, and in particular 22.5 days,
- it induces phosphorylation on a tyrosine of a protein of 200 kDa,
- it induces proliferation of vascular endothelial cells,
- it does not induce migration of endothelial cells,
- it stimulates angiogenesis,
- it does not cause arterial hypotension,
- it does not affect the permeability of vessels.

--27. Fab fragment of the anti-idiotypic antibody according to claim 25.

--28. Fab fragment of the anti-idiotypic antibody according to claim 26.

--29. Complex between an anti-idiotypic antibody according to claim 25 and a toxin, in particular chosen from saporin and ricin, or between an anti-idiotypic antibody according to claim 25 and a radioactive element, such as iodine-125 or -131.

--30. Anti-idiotypic antibody according to claim 25 produced by the following steps:

- purified VEGF is injected into an animal, in particular a rabbit,

- blood is withdrawn to recover purified Ig containing specific anti-VEGF IgG, for example by affinity chromatography for protein A, and then in a possible stage the specific anti-VEGF IgG are purified from the purified Ig, for example by affinity chromatography for VEGF,

- the above-mentioned purified Ig or the above-mentioned purified anti-VEGF IgG are injected into an animal of the same species as that used for injection of the VEGF, in particular into the popliteal ganglions of a rabbit of the same origin as that used for injection of the VEGF,

- blood is withdrawn to recover the total Ig, for example by protein A, and then to subject the total Ig to two immunoadsorptions:

- an immunoadsorption on an affinity column prepared with the pre-immune Ig of the rabbit which has been used to produce the anti-VEGF

IgG, to eliminate the anti-allotypic or isotypic antibodies,

- an immunoadsorption on an affinity column prepared with the anti-VEGF IgG, to purify the anti-idiotypes.

--31. Process for the preparation of an anti-idiotypic antibody according to claim 25, comprising:

- injecting purified VEGF into an animal, in particular a rabbit,

- withdrawing blood to recover purified Ig containing specific anti-VEGF IgG, for example by affinity chromatography for protein A, and then in a possible stage the specific anti-VEGF IgG are purified from the purified Ig, for example by affinity chromatography for VEGF,

- injecting the above-mentioned purified Ig or the above-mentioned purified anti-VEGF IgG into an animal of the same species as that used for injection of the VEGF, in particular into the popliteal ganglions of a rabbit of the same origin as that used for injection of the VEGF,

- withdrawing blood to recover the total Ig, for example by protein A, and then to subject the total Ig to two immunoadsorptions:

- an immunoadsorption on an affinity column prepared with the pre-immune Ig of the rabbit which has been used to produce the anti-VEGF